

NEW FORMULA 3.311.5

The original formula is

$$\int_0^{\infty} \frac{1 - e^{\nu x}}{e^x - 1} dx = \psi(\nu) + \mathbf{C} + \pi \cot(\pi\nu)$$

it reads better in the form

$$\int_0^{\infty} \frac{e^{ax} - 1}{e^x - 1} dx = -[\psi(a) + \gamma + \pi \cot(\pi a)]$$